

A PUBLICATION FROM

**3C**  
SOFTWARE

# It Starts with Costs

How manufacturing companies drive profits with accurate and actionable cost information

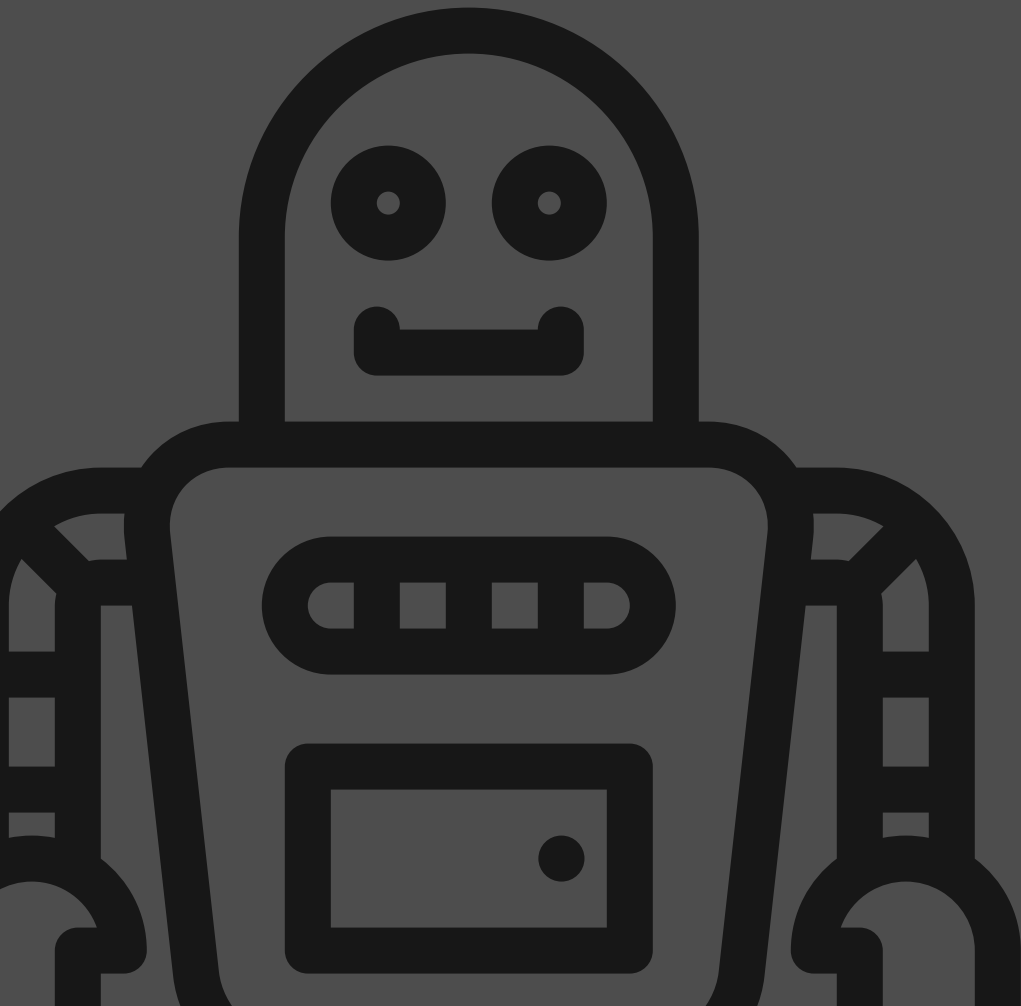
# What's inside?

We're all about helping companies grow by giving them tools and knowledge to understand how costs are shaping their performance. This eBook focuses on the challenges of cost and profitability analytics and ways companies are leveraging their existing data from ERP and other sources to deliver accurate and actionable results.

**Chapter one** *It starts with costs*

**Chapter two** *Establishing your company's cost and profitability ecosystem*

**Chapter three** *Expanding ERP costing capabilities with ImpactECS*





A photograph of a warehouse interior. A yellow forklift is carrying a large pallet of white sacks. The operator is visible in the background, wearing a hard hat and safety vest. The scene is lit with warm, golden light, possibly from a window or a light source. The text 'chapter one' is overlaid on the left side of the image.

chapter one

# It starts with costs

As a manufacturer, your ability to calculate and analyze the cost of the products you build and sell is fundamental to your company's profit performance. Complicated manufacturing processes, large product catalogs, or multiple production facilities, are all indicators that calculating real and actionable cost answers is not a simple task. But in order to gain and maintain a competitive advantage, you must find deeper insights into cost performance.

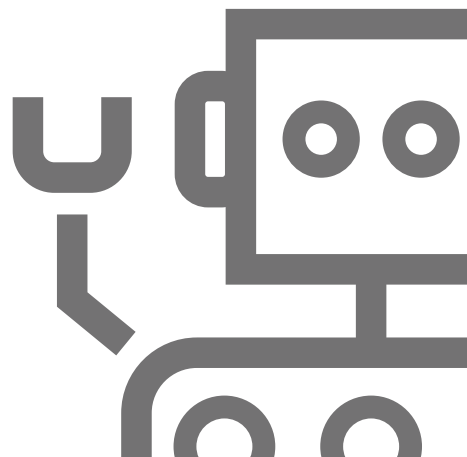
### Why are manufacturers so focused on the ways to improve cost information?

Because it affects 4 key decisions every manufacturer has to consider:

- 1** THE PRODUCTS YOU MAKE & HOW TO BEST MAKE THEM
- 2** THE PRICES YOU CHARGE TO GROW & PROTECT YOUR MARGINS
- 3** THE TACTICS YOU IMPLEMENT TO IMPROVE PROCESSES, IDENTIFY ROOT CAUSES & REDUCE WASTE
- 4** THE STRATEGIES YOU DEVISE TO ACHIEVE PERFORMANCE GOALS & INITIATIVES

93% of companies are, or will be, taking action to improve the quality of their cost information.

*Costing and cost transparency:  
Helping finance create business value*  
Deloitte, 2016





Any process that you design to help guide those key decisions should focus on three areas — the **rules** that guide how results are calculated, the **tools** involved in the analysis, and the **data** required to provide meaningful insights.

## Rules

Modeling cost and profitability performance requires more than just the ability to perform math functions. To deliver value, manufacturers need their analytical processes to adhere to the four fundamental tenants:



### **SUPPORT (YOUR) REAL WORLD SITUATIONS**

Say, for instance, your company manufactures products in multiple locations or the prices of your commodity inputs are driven by exchange rate fluctuations, your cost and profitability models should account for the unique scenarios that impact your business.



### **DELIVER TIMELY RESULTS**

There's little value in answers that take too long to calculate. Cost and profit models must be agile enough to offer results quickly and saves time for analysis.



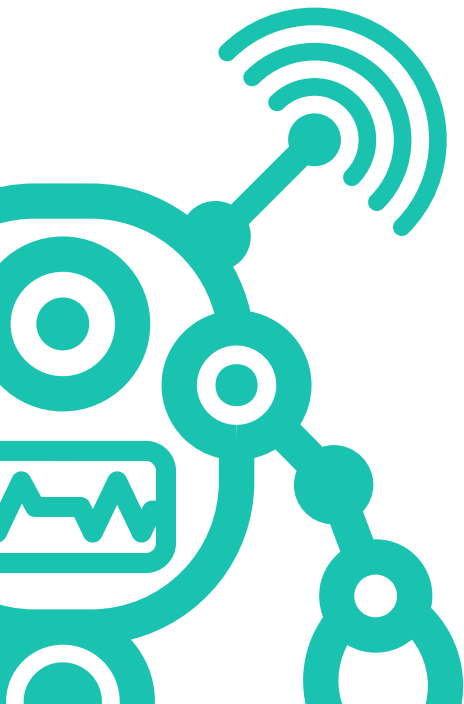
### **INCLUDE MEASURABLE & MEANINGFUL KPIs**

All metrics are not created equal. Cost and profit models should rely on data that is quantifiable and the results that offer actionable guidance to inform business decisions at all levels.



### **APPLY CONSISTENT LOGIC & ASSUMPTIONS**

Remove the noise from analysis with detached or ad hoc modeling techniques. By using the same logic and assumptions to calculate real or simulated costs, you can have an apples-to-apples comparison of the effects both internal and external changes have on performance.



## Tools

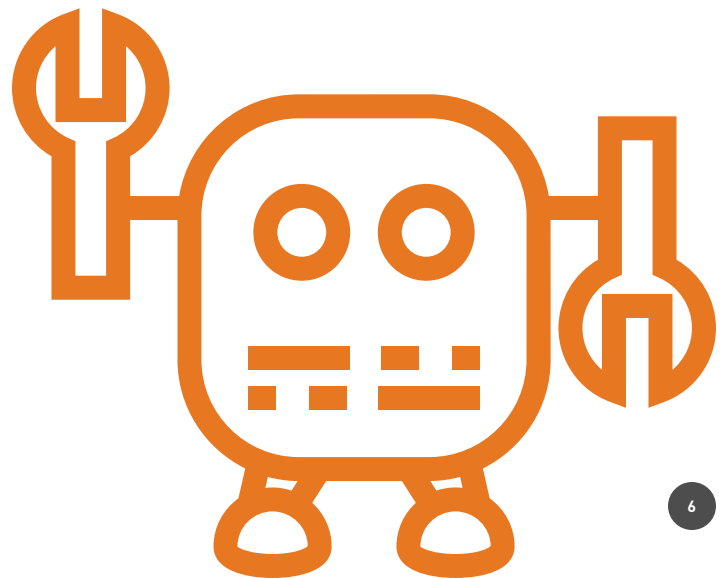
At most companies, the technology landscape has a gap when it comes to systems that quickly simulate and analyze key cost and profit metrics critical to support the key business decisions manufacturing finance teams face.

ERP systems are robust. They handle lots of data and crunch lots of numbers. But at their core, ERP systems are transactional systems that consolidate and report critical data on their customers (info, orders, support), their products (materials, procurement), their employees and infrastructure (HR, IT, admin).

Niche, or user-developed applications, are designed for a specific purpose and come in two flavors: the antiquated legacy systems developed on AS/400 with custom code only one person in the company knows, or something developed using Access database-like systems that lack IT controls.

Because of the limitations ERP and niche solutions provide, spreadsheets have become the de facto analytics tool for finance teams. But their inability to handle large data sets, challenges with data integrity, and lacking auditability are among just a few issues using desktop modeling tools.

Integrated modeling and analytics platforms offer the combination of robustness and flexibility are required to establish a cost and profitability practice that delivers timely, accurate, and actionable results.







SYSTEM ROBUSTNESS

### Transactional System/System of Record

ERP

→ Rigid or limiting implementations with no inherent simulation capabilities



### Niche Systems

USER-DEFINED APPLICATIONS

→ Custom implementations with partial or reduced controls

→ Simulation capabilities limited to programmed options



SYSTEM FLEXIBILITY



### Integrated Modeling & Analytics Platform

IMPACT ECS

→ Centralized modeling platform integrated with IT architecture

→ Complete flexibility in designing and managing data and model logic to meet business requirements



### Desktop Modeling Tools

SPREADSHEETS

→ Limited controls and auditability ensures integrity issues

→ Unable to scale or handle large data sets, limiting simulation capabilities



## Data

From integrating relevant data across disparate systems to making better decisions across the organization, the inputs and results generated should provide real visibility into overall cost and profitability performance. Effective cost and profitability analytics programs leverage existing data from ERP, shop floor, and other systems to calculate answers, test theories, and predict outcomes. They allow you to create and analyze new data sets based on changing requirements or business conditions with the same underlying assumptions and logic you use to run the business.



### Relevant Data Integration

Gather critical data from systems across the company.

→ **ERP**

General Ledger, Master Data (Material, Routing, Customer, Sales, Order, etc.)

→ **Shop Floor**

Production Orders, Efficiencies, Capacities, Changeovers, Speeds, Lot Sizes, Material Flows

→ **Other Systems**

Data Warehouses, Payroll & Time, Ticket Systems, Warehouse Management, Quality Control, Spreadsheets, Legacy, Third Party



### Intelligent Data Handling

Extract, transform and load relevant data into a central cost and profitability repository.



### Meaningful Insights

Calculate answers, test theories, and predict outcomes that impact the business.

→ Price, Mix or Volume Changes

→ BOM or Routing Changes

→ Best/Likely/Worst Case

→ Lowest Cost Formulation

→ Make vs. Buy

→ Margin Analysis





### User-Specific Business Apps

Enable the processes critical to your business goals.

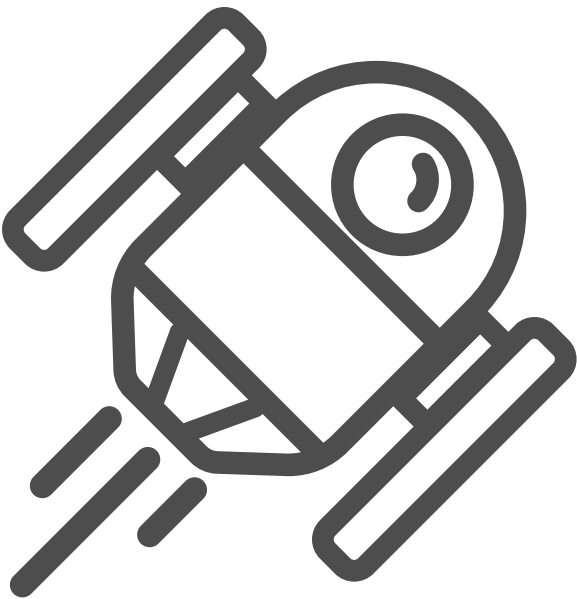
- Forecasts and Budgets
- Standard Product Costs
- Target and Should Costs
- Variances
- What-if Simulations
- Cost-Based Quoting
- Supply Chain Analytics
- Profitability



### Better Decisions Across the Organization

Make informed decisions that support your business goals.

- Identify trends and opportunities
- Make products and customers more profitable
- Prepare for changing business conditions
- Focus on value-added activities
- Create transparency around cost and profitability data.





chapter two

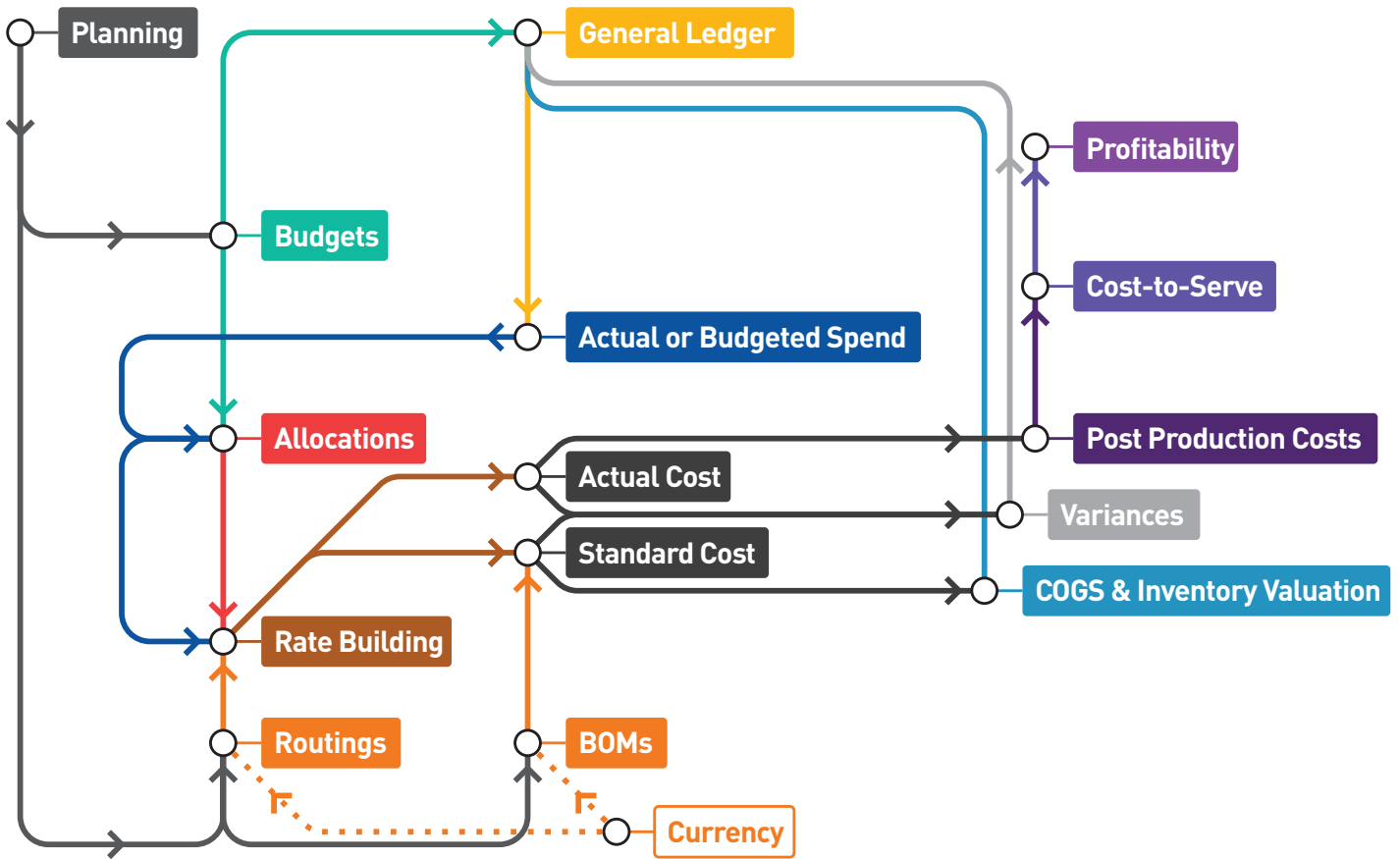
# Establishing your company's cost and profitability ecosystem





Effective cost and profitability programs require a robust analytical approach supported by connected data and common goals. There are a host of activities required to calculate meaningful cost and profitability answers — and they have implications across the organization.

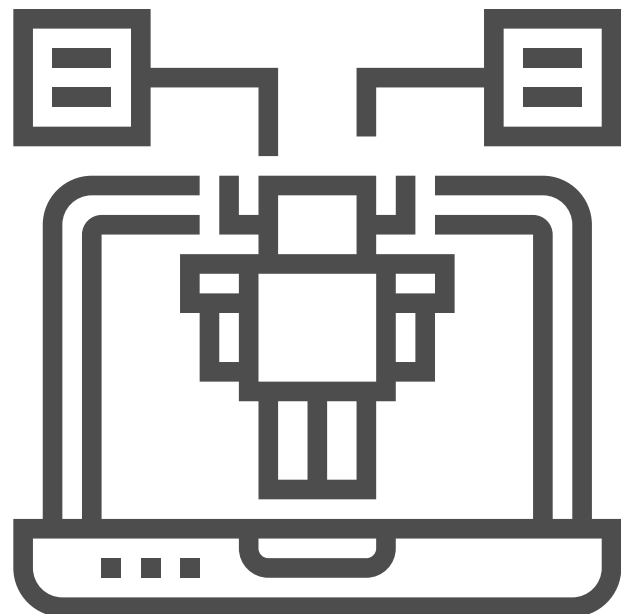
To help you visualize how cost data flows through the organization, we developed the **Cost Management Ecosystem** (shown below). The Ecosystem demonstrates the finite relationship between critical data, establishes how they are connected, and explains their purpose.



By using a framework like the Cost Management Ecosystem, your organization can develop a common language around cost and profitability to break down data silos that exist between departments and functions. You can also use it as a guide to take inventory of the systems and functionalities you have today and identify any gaps in your analytical capabilities.

What we've learned over the years working with some of the world's leading manufacturing companies is that **ERP systems are unable to live up to both the transactional and analytical needs of their organization.** They create workarounds — and spreadsheets — to get insights, but these activities are often unsustainable and can create significant risks for the company.

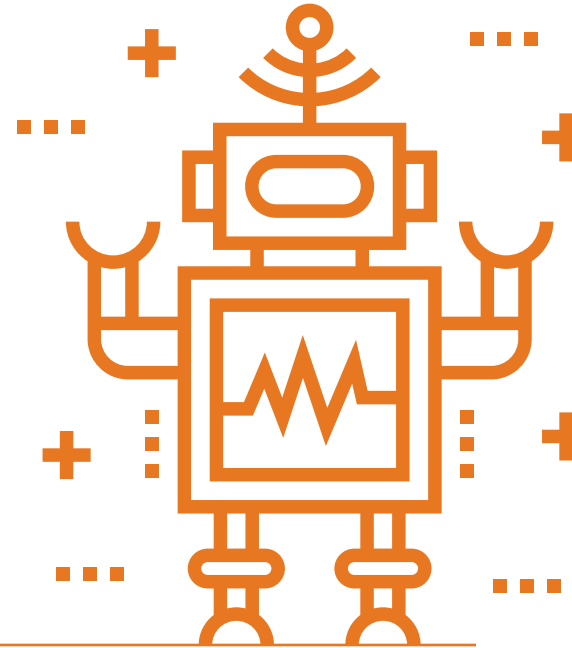
**ImpactECS solves that problem.** It gives you the tools to implement a unique cost and profitability environment tailored to your industry or company requirements. With all the benefits of an enterprise-level system and all the flexibility of a spreadsheet modeling tool, ImpactECS streamlines the costing process and puts the focus on analyzing — not computing — the results.



# One Platform. Many Industries.

“There’s the textbook way to calculate costs, and then there’s the way we do it.”

We hear this a lot because complex manufacturers struggle to align the metrics, attributes, or drivers that matter to them with the “textbook way” their ERP system defines how costs are calculated. Here are a few industries with complicated costing challenges, and how ImpactECS fills their unique analytical gaps and delivers meaningful answers.



## Paper

With the ability to understand costs at the most basic level — a specific run of a paper grade on a specific paper machine — mill managers and machine operators can have a deeper understanding of their performance and how to improve. ImpactECS gives paper companies the platform to create an end-to-end cost and profitability system that can account for pulp costs, paper machine efficiencies, broke costs, energy costs, and conversion costs.



## Textile & Apparel

Textile and apparel manufacturers tend to have product lines that include lots of variants, and calculating these costs can quickly balloon into an unwieldy task. ImpactECS lets both woven and non-woven textile companies calculate SKU-based detailed product cost models that can account for every variation.



## Semiconductor

From fully-integrated manufacturers to manufacturing-free organizations, these companies need visibility into the detailed product costs for their offerings. Three of the biggest costing and profitability challenges for these companies is calculating costs at each WIP point, handling lot splits and joins and managing vendors or subcontractors. The flexible design of the ImpactECS platform gives semiconductor finance and operations teams the ability to handle all three and more in one system.





## Food & Beverage

Unlike most industries, food companies — especially protein processors — deal with the challenging prospect of calculating costs for disassembly processes as well as further processing. Handling both in one system could seem counterintuitive, but ImpactECS' architecture allows companies to define the logic used to perform calculations in a method that matches their unique production profile. In addition, ImpactECS can assist food and beverage companies with interpreting the effects of raw material substitutions, commodity and market price changes, and valuing inventories within the same model.



## Chemicals & Plastics

Complex BOM and recipe management, changing batch sizes and input streams, and capital-intensive tool and die investments are all significant challenges for companies in these industries. Moreover, these companies tend to have a large number of SKUs that have a specific cost. With ImpactECS, it's possible to have an integrated model that handles the standard setting process, detailed actual costing, and forward looking analysis simultaneously.

*Energizer*

*Kellogg's*

Hostess

*Coca-Cola*

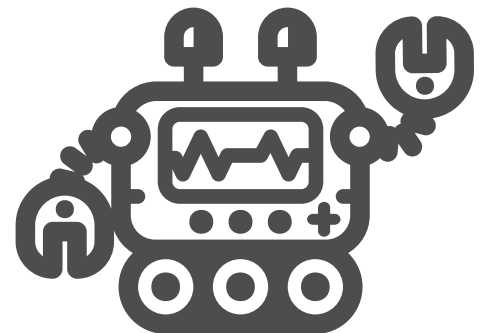
  
FRUIT OF THE LOOM

little tikes



## Project-Based Manufacturing

Project-based manufactures are required to report actual costs, statistics and variances in multiple views while maintaining detailed cost element data. Large work breakdown structures (WBS) with integrated BOMs that account for WIP items consumed by other WIP items, as well as by final products across multiple producing plants creates a level of complexity that demands a flexible solution like ImpactECS. Additionally, internal and external audit and compliance requirements, starting with the bidding process and continuing through program completion, are met with ImpactECS.



Novelis





chapter three

# Expanding ERP costing capabilities with ImpactECS

There are two general use cases for companies that augment their ERP processes with ImpactECS:

- 1** I CAN CALCULATE COSTS IN MY ERP, BUT I NEED MORE DETAIL
- 2** I'M HAPPY WITH THE DETAIL AVAILABLE FROM COSTING WITH ERP, BUT I STILL NEED MORE CAPABILITIES



I can calculate costs in my ERP, but I need more detail

Many ERP systems — either by design or due to decisions made during implementation — are lacking when it comes to providing the granularity required for many complex manufacturers. Here are some common ways ImpactECS improves transparency and access to meaningful results.

**Unlimited Cost Detail**

Calculating costs at a granular level and defining cost buckets that make sense for your business are core to ImpactECS' capabilities. Go beyond general material, labor, and overhead categories and create a list of relevant cost buckets so you can make more informed decisions.

	MATERIALS			LABOR			VARIABLE OVERHEAD				FIXED OVERHEAD				TOTAL
	Direct Materials	Indirect Materials	Materials Total	Direct Labor	Indirect Labor	Labor Total	Energy	Utilities	Equipment Maintenance	Variable OH Total	SG&A	Rent	Salaries	Insurance	Fixed OH Total
Product A	\$4.32	\$1.11	\$5.43	\$2.14	\$0.57	\$2.71	\$0.02	\$0.14	\$0.75	\$0.91	\$1.13	\$0.05	\$0.03	\$0.02	\$1.23
Product B	\$3.68	\$2.09	\$5.77	\$1.65	\$0.44	\$2.09	\$0.03	\$0.11	\$0.57	\$0.71	\$0.78	\$0.04	\$0.02	\$0.01	\$0.85
Product C	\$6.87	\$0.28	\$7.15	\$3.86	\$0.89	\$4.75	\$0.07	\$0.12	\$1.53	\$1.72	\$2.11	\$0.11	\$0.07	\$0.03	\$2.32
<b>Total</b>	\$14.87	\$3.48	\$18.35	\$7.65	\$1.90	\$9.55	\$0.12	\$0.37	\$2.85	\$3.34	\$4.02	\$0.20	\$0.12	\$0.06	\$4.40

**Maintain Cost Detail for Consumed Materials**

When a child product (WIP item, component, semi-finished good) is used to manufacture another product, ERP systems typically combine and pass over all the costs associated with the child as a material cost for the parent product. This practice makes it virtually impossible to trace the root causes of costs and eliminates your ability to understand the composition of costs associated with the product. ImpactECS solves that challenge by maintaining cost information at its natural level, allowing for more meaningful insights.

	MATERIAL	LABOR	VARIABLE OVERHEAD	FIXED OVERHEAD	TOTAL
<b>Part 1</b>	\$3.02	\$2.14	\$1.93	\$1.07	\$8.16
Child 1A	\$0.30	\$0.70	\$0.78	\$0.24	\$2.02
Child 1B	\$2.72	\$1.44	\$1.15	\$0.83	\$6.14
<b>Part 2</b>	\$4.39	\$3.67	\$2.35	\$1.44	\$11.85
Child 2A	\$1.24	\$1.56	\$1.60	\$0.67	\$5.07
Child 2B	\$3.15	\$2.11	\$0.75	\$0.77	\$6.78
<b>Product</b>	\$7.41	\$5.81	\$4.28	\$2.51	\$20.01



# 1

I can calculate costs in my ERP, but I need more detail

### Multiple Cost Sets & Versions

Many companies want to look at costs in more than one way. ImpactECS gives you the ability to maintain multiple costs sets (standard, actual, frozen, current, should, etc.) and compare them side-by-side to identify and evaluate variances.

### Plant Specific & Blended Costs

If you have more than one way to make a product, then you know there's always more than one cost result. ImpactECS gives you the ability to calculate product costs specific to the production location and a way to blend those costs to use as the stated cost of the product for financial reporting.

### Transfer Price Clarity

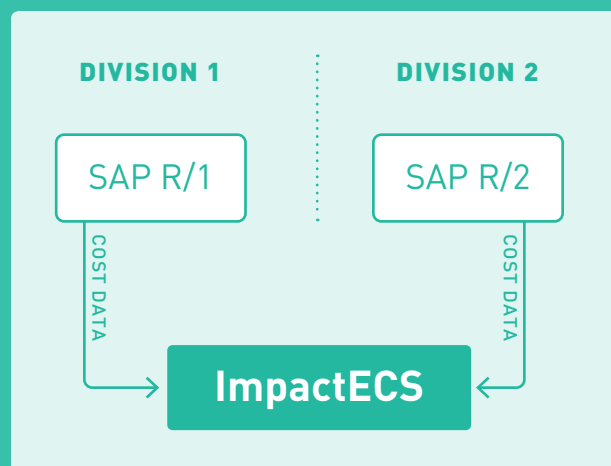
Similar to the challenges with consumed materials, internal markups often become muddled in the cost results, making it difficult to understand the true profit margin for a product. With ImpactECS, you can isolate and track these markups separately to make sure your organization is meeting both internal and external profit goals.

# 2

I'm happy with the detail available from costing with ERP, but I still need more capabilities

### Consolidate and Harmonize Data

The reality is most manufacturers have a hodgepodge of finance, ERP, operations and data systems that each hold data important to calculating costs accurately. ImpactECS gathers and transforms data from systems across the organization and harmonizes it to provide a centralized repository of cost and profitability data.



# 2

I'm happy with the detail available from costing with ERP, but I still need more capabilities

## **Advanced Simulation Capabilities**

Due to the transactional nature of ERP systems, it's nearly impossible to run simulations without negatively affecting the way the system is designed to work. By replicating your ERP costing process in ImpactECS, you can adjust any variable or input and test the effect of that change in just a few clicks without workarounds or supplemental spreadsheets.

## **Build Allocation Rates**

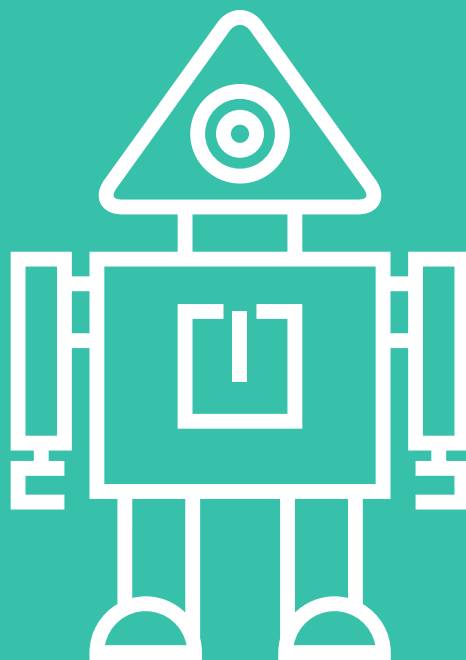
Often, rates are calculated outside the ERP system using spreadsheets and the result is plugged in to allocate spending. With ImpactECS, you can pool general ledger spending and calculate rates dynamically based on the most appropriate (and trackable) cost drivers.

## **Generate Budgets**

Budgeting is an arduous process, and having accurate cost information is a critical component to delivering a useful budget. ImpactECS has two approaches to building budgets. You can either multiply standard costs for direct labor, factory overhead and direct materials by expected product volume and mix to establish a summary budget, or calculate the budget at the BOM and routing levels and summarize into the appropriate General Ledger accounts.

## **Cost-based Quoting**

Most quoting tools only give you the ability to choose from a predetermined set of options or inputs to generate the cost associated with producing the item. With ImpactECS, you can utilize BOM, routing, sourcing and vendor data, and other relevant expenses to build an accurate cost-based quote to set a price that protects your margins.



# Contact us

Now that you've finished reading our short review of how we've helped ERP users expand their ability to analyze their company's performance by creating end-to-end cost and profitability models with ImpactECS, we're sure you want to learn more.

## Visit us online

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